Environmental Horticulture Program Research Project Sheet

https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-extension-resources/

Project Name: Mosquito Efficacy and Bromeliad Safety

New		Ongoing		Completed	X	Duration if ongoing or completed:	2018/2019

Project Description:

It is likely that ornamental bromeliads are contributing for the proliferation of *Aedes aegypti* and other invasive mosquitoes in California and other states. These mosquitoes are vectors for serious diseases including Zika and Dengue. There are no registered products that are suited for large-scale application for management of mosquitoes in bromeliads; e.g. Bti granules may work but they have to be applied by hand to every plant.

Research Project Abstract (if available):

n/a

Target Species (Phytotoxicity, or common and Latin name of arthropod, pathogen, weed):

Mosquito, Dengue (*Aedes aegypti*)
Mosquito, Dengue (*Aedes albopictus*)

Target Crops (list tested crops if ongoing or completed project)

Neoregelia sp.
Neoregalia medusa

Target Product(s)(list tested products or numbered compounds if ongoing or completed project)

Duplex-G (*Bacillus thuringiensis sugsb israelensis* strain BPM 144)
Nyguard (pyriproxifen)
Sumilarv 0.5G (pyriproxifen)
VectoBac WDG (*Bacillus thuringiensis subsp israelensis* strain AM65052)

Product Registration and Research Status

	Fully Screened (also includes standards)	Partially Screened through IR-4 [1]	Need Data Across Species?
Labeled Generally & Commercialized			
Labeled Generally But NOT Commercialized			
Labeled Specifically & Commercialized			
Labeled Specifically but NOT Commercialized			
Not yet registered or Labeled			
No longer available for development			

* IR-4 Data contributed to registration decision – either adding pest to label or not pursuing further research
1 At least one species screened fully

Area	Characteristic	Pro	Con
Availability & effectiveness of alternative management tools	There are no registered products that are suited for large-scale application for management of mosquitoes in bromeliads; e.g. Bti granules may work but they have to be applied by hand to every plant.	X	

Damage potential of target	Mosquitoes represent human hazard while growing bromeliads	X	
Performance and crop safety of proposed products (from other systems)			
Compatibility with IPM, resistance management programs			
Economics			
Geographic distribution			
Manufacturer interest in labeling products			
Other			

Comments: Other products should be considered in addition to pyriproxifen and literature should be researched. The mosquito larvae in the cups is probably the key point for control but adulticides would be a good addition. Currently in first year of screening as WSR regional project.

IR-4 Crop Safety Trials to Date

Average rating on a scale of 1 – 5 with 1 = 0 to about no injury and 5 = severe injury and mortality; minimum to maximum rating; number of trials. A rating of 3 or higher is considered commercially unacceptable (*red text*). A rating of 1 or 2 is considered commercially acceptable and those with more than 3 trials are complete (**green text**). 'Labeled' indicates that IR-4 generated data in at least one trial and that this crop is listed on the label. For crop/product combinations that are blank, IR-4 has not screened this combination.

MOA	Product (Active Ingredients)	Mosquito, Dengue (*Aedes aegypti*)	Mosquito, Dengue (*Aedes albopictus*)
IRAC 7C	Nyguard (pyriproxifen)	**5.0 (5 - 5) n1**	**5.0 (5 - 5) n1**
IRAC 7C	Sumilarv 0.5G (pyriproxifen)	**5.0 (5 - 5) n1**	**5.0 (5 - 5) n1**
IRAC 11A	Duplex-G (Bacillus thuringiensis sugsb israelensis strain BPM 144)	**5.0 (5 - 5) n1**	**5.0 (5 - 5) n1**
IRAC 11A	VectoBac WDG (Bacillus thuringiensis subsp israelensis strain AM65052)	**5.0 (5 - 5) n1**	**5.0 (5 - 5) n1**